Kentucky CTE

Computer Science: Introduction to Digital Game Graphics

Identify the target audience of a game GD2.1	1 Identify the target audience of a game GD2.1
Explain impact of “feature creep” on production GD2.2	2 Explain impact of “feature creep” on production GD2.2
Explain the interdependence of team members between artistic, technical and production disciplines GD2.3	3 Explain the interdependence of team members between artistic, technical and production disciplines GD2.3
Explain the purpose of prototyping GD2.4	4 Explain the purpose of prototyping GD2.4
Outline in detail the process of developing a game from concept to delivery and support GD2.5	5 Outline in detail the process of developing a game from concept to delivery and support GD2.5
Describe each step of the production process GD2.6	6 Describe each step of the production process GD2.6
Explain how the project is going to be managed according to a milestone plan GD2.7	7 Explain how the project is going to be managed according to a milestone plan GD2.7

Explain the various types of collaboration tools GD2.8	**8** **Explain the various types of collaboration tools** GD2.8
Utilize the production pipeline in the development of a game GD2.9	**9** **Utilize the production pipeline in the development of a game** GD2.9
Explain the value of version control GD2.10	**10** **Explain the value of version control** GD2.10
Explain the purpose of vertical slice GD2.11	**11** **Explain the purpose of vertical slice** GD2.11
Demonstrate version control for example, Node Version Manager (NVM) GD2.12	**12** **Demonstrate version control for example, Node Version Manager (NVM)** GD2.12
Demonstrate good quality assurance practices GD2.13	**13** **Demonstrate good quality assurance practices** GD2.13
Conceptualize and illustrate original game characters and assets GD2.14	**14** **Conceptualize and illustrate original game characters and assets** GD2.14
Utilize illustration to create assets GD2.15	**15** **Utilize illustration to create assets** GD2.15
Establish a standard for world scale GD2.16	**16** **Establish a standard for world scale** GD2.16
Create a storyboard for planning animation GD2.17	**17** **Create a storyboard for planning animation** GD2.17
Change an object's state or position over time GD2.18	**18** **Change an object's state or position over time** GD2.18
Establish an object's relative speed GD2.19	**19** **Establish an object's relative speed** GD2.19

Simulate a naturally occurring or mechanical cycle such as walking GD2.20	**20** **Simulate a naturally occurring or mechanical cycle such as walking** GD2.20
Apply animation to game assets GD2.21	**21** **Apply animation to game assets** GD2.21
Describe the role of typography GD2.22	**22** **Describe the role of typography** GD2.22
Evaluate the use of layout and composition GD2.23	**23** **Evaluate the use of layout and composition** GD2.23
Explain color theory GD2.24	**24** **Explain color theory** GD2.24
Describe the principles of animation GD2.25	**25** **Describe the principles of animation** GD2.25
Describe the role of perspective GD2.26	**26** **Describe the role of perspective** GD2.26
Demonstrate 1- and 2-point perspectives GD2.27	**27** **Demonstrate 1- and 2-point perspectives** GD2.27
Draw a proportionally correct figure GD2.28	**28** **Draw a proportionally correct figure** GD2.28
Describe the characteristics and purposes of 2D, 2,5D, and 3D art GD2.29	**29** **Describe the characteristics and purposes of 2D, 2,5D, and 3D art** GD2.29
Recognize the importance of and implement continuity of art style GD2.30	**30** **Recognize the importance of and implement continuity of art style** GD2.30
Describe environments within a game GD2.31	**31** **Describe environments within a game** GD2.31
Compare the process of creating an interior vs	**32** **Compare the process of creating an interior vs exterior environment** GD2.32

exterior environment GD2.32	
Identify components in an environment GD2.33	33 Identify components in an environment GD2.33
Generate terrains for a specific environment GD2.34	34 Generate terrains for a specific environment GD2.34
Create hard surface assets GD2.35	35 Create hard surface assets GD2.35
Create an environment GD2.36	36 Create an environment GD2.36
Develop organics for a specific environment GD2.37	37 Develop organics for a specific environment GD2.37
Describe archetypes of characters GD2.38	38 Describe archetypes of characters GD2.38
Explain character personalities and stereotypes GD2.39	39 Explain character personalities and stereotypes GD2.39
Compart and contrast methods to design characters GD2.40	40 Compart and contrast methods to design characters GD2.40
Describe the character's evolution throughout the game GD2.41	41 Describe the character's evolution throughout the game GD2.41
Examine importance of non-player characters (NPC) GD2.42	42 Examine importance of non-player characters (NPC) GD2.42
Construct character(s) for a game GD2.43	43 Construct character(s) for a game GD2.43
Differentiate between syntax and semantics GD2.44	44 Differentiate between syntax and semantics GD2.44

Incorporate primitive data types GD2.45	**45 Incorporate primitive data types** GD2.45
Utilize arrays to store a list of primitive data types GD2.46	**46 Utilize arrays to store a list of primitive data types** GD2.46
Demonstrate input from different sources GD2.47	**47 Demonstrate input from different sources** GD2.47
Construct and register a callback function GD2.48	**48 Construct and register a callback function** GD2.48
Compare and contrast constants and variables GD2.49	**49 Compare and contrast constants and variables** GD2.49
Select and implement conditional control GD2.50	**50 Select and implement conditional control** GD2.50
Implement functions GD2.51	**51 Implement functions** GD2.51
Select and implement iterations (loops, recursion,) GD2.52	**52 Select and implement iterations (loops, recursion,)** GD2.52
Recognize and implement sequential control GD2.53	**53 Recognize and implement sequential control** GD2.53
Test and debug programs GD2.54	**54 Test and debug programs** GD2.54
Design and implement user-defined data types GD2.55	**55 Design and implement user-defined data types** GD2.55
Demonstrate output to different destinations GD2.56	**56 Demonstrate output to different destinations** GD2.56
Practice object-oriented programming	**57 Practice object-oriented programming (OPP)** GD2.57

(OPP) GD2.57

Identify expected input and output GD2.58	**58** **Identify expected input and output** GD2.58
Utilize basic steps in algorithmic problem-solving GD2.59	**59** **Utilize basic steps in algorithmic problem-solving** GD2.59
Discuss top-down versus bottom-up development GD2.60	**60** **Discuss top-down versus bottom-up development** GD2.60
Generate test cases and expected results GD2.61	**61** **Generate test cases and expected results** GD2.61
Apply simple data structures GD2.62	**62** **Apply simple data structures** GD2.62
Explain how algorithms are used to produce artificial intelligence (AI) GD2.63	**63** **Explain how algorithms are used to produce artificial intelligence (AI)** GD2.63